

BIODIVERSITY SIGNIFICANCE -
GOLDEN GATE HIGHLANDS
NATIONAL PARK

DEFINITION

Biodiversity is described as the variety of all forms of life, from genes to species, through to the broad scale of ecosystems.

- Tells us about the interactions between ecosystem composition, structure and functioning.

20/05/2020

Biodiversity

- Intrinsic value for conservation
All life forms deserve life and persistence of as many different types of characteristics as possible

EVALUATION OF SIGNIFICANCE

- Questions should be asked about the: **integrity**, **viability** and **representativeness** of biodiversity
- Consideration should be given to the **scientific significance** of impacts on the **composition, structure and function** of biodiversity levels of landscape, **ecosystem**, **species** and **population** types

OBJECTIVES

Biodiversity objective

To maintain biodiversity in the R. Sabar and fluxes

Ecosystem Objectives

To understand & manage the R. Sabar as part of the
Grassland Biome and its river catchments in
such a manner as to conserve & restore its varied
natural structure, function and composition over
time and its wilderness qualities through an
integrated approach

20/05/2017

Flora & Fauna

Flora

- Show more than 10 grass species as well as large variety of shrubs & herbs

- Wildflowers can be seen throughout the year

Fauna

- 13 species of mammals recorded, 12 species of birds, 10 reptiles and eight antelope species

- Grey rhinoceros and mountain reedbuck were already present when the park was established

- Gaur, blackbuck, black wildebeest, springbok, oribi and reedbuck were introduced

Other

Geology

The following sequence of geological formation are visible in the park:

1. Molteno formation
2. Elliot formation
3. Clarens formation
4. Drakensberg formation

In addition, fossils are also associated with the Molteno and Elliot formations. The classic dip-slopes system in the park was first described by Rood (1973).

Biodiversity Objectives

BIODIVERSITY SIGNIFICANCE

Ecosystem Objectives

Sub - Objectives

ATMOSPHERIC

AQUATIC

TERRESTRIAL

ALIEN

RARE BIOTA

CLIMATE (rainfall)
Monitor rainfall
Max & min daily temp,
wind speed etc

AQUATIC ECOSYSTEM
Water quality
Catchment areas

TERRESTRIAL ECOSYSTEM
& NATURAL PROCESSES
Monitoring

PREVENTION & CONTROL
Monitoring

PREVENTION OF EXTINCTION
OF SPECIES INCLUDING RDL

ABIOTIC PROCESS

BIOTIC PROCESS

COMMUNITY PROCESSES

Erosion
Fire
Terrestrial components
including rainfall, soil filtration etc

Reproduction survival &
mortality
Reintroduction
Generic process etc

Competition, Primary production,
Herbivory, Succession,
Disease & Parasitism,
Predation

Ecosystem Sub - Objectives

- 1. Assess the current status of the ecosystem
- 2. Identify the sources of climate change
- 3. Determine the impact of climate change on the ecosystem
- 4. Develop a plan to reduce the impact of climate change on the ecosystem
- 5. Implement the plan and monitor the progress
- 6. Report on the progress and make adjustments as needed

Ecosystem sub-objective

Threats to development integrated
with biodiversity conservation
where necessary to allow
ecosystem services to be
maintained
Areas to prevent any
possible control invasive alien species in
order to maintain
indigenous biodiversity

Source: <http://www.unep.org/indicators/indicators.asp?indid=10>

Ecosystem sub-objective

Establish and maintain a relationship with the DCP of any species on the Ecosystem with a view to secure the future of such species within its historic range

Terrestrial Sub-Objective

1. **Ecological** - assess the relative value of different habitats and ecosystems in terms of their ability to provide goods and services to society, and to understand the implications of different land use and management options for the delivery of these goods and services
2. **Composition, structure & heterogeneity** - work to be biodiversity resource to understand the ecology of important elements & threats leading to compositional/structural changes

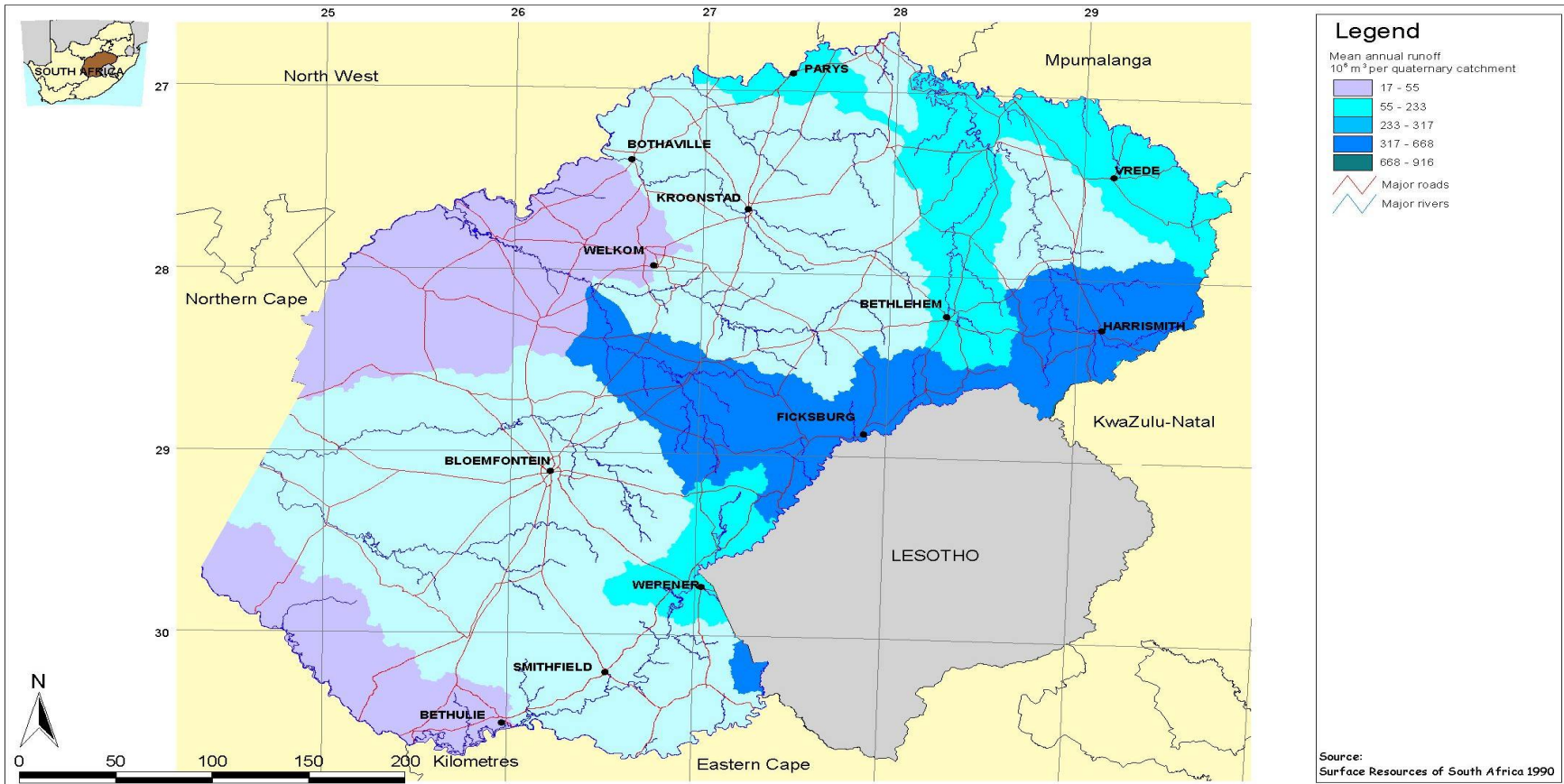
Ecological Sub - Objectives

1.

2.



Aquatic



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Environmental Potential Atlas for the Free State QUATERNARY CATCHMENT RUNOFF

July 2000

Department of Environmental Affairs and Tourism,
 University of Pretoria &
 GIS Business Solutions

Aquatic - Catchment

- GGFNP is situated on the Great Goulburn River
- Goulburn River system comprises the Goulburn & Campaspe River systems (Goulburn system)
- Extends from the Murrumbidgee River & Campaspe River to the Aquatic Reserve
- One of the most important water supply systems in South Africa (Orange-Fraser Complex)
- More than 50% of water supply of Southern Africa comes from Goulburn
- 17% of mean annual outflow catchment runoff

Rare Biota.....

FLORA

- Mostly Vulnerable and Least Threatened
- Diacaenagynis, *Herposiphonia*, *Epiphyllum*
- Eucomis autumnalis*, *Nerilya plumbea*, *Protea*
- roupellae*

FAUNA

- Birds: *Gypaetus barbatus* (Bearded vulture) – Vulnerable
- Small mammals: *Felis lybica* (African wildcat) – Vulnerable
- Aelurus frontalis* (African hedgehog) – Vulnerable
- Large mammals: *Oryx capensis* (Oryx) – Vulnerable

Conclusion: Wilson (1988)

Wilson (1988) argued that the
symbolic interactionist perspective
was the best way to understand
the world.
He argued that the world might be
based more on what we do not know
than what we do know.